

ABSTRACT

The present invention provides a technique to reduce a stress of thick spin-on dielectric layer by forming a sandwich dielectric structure, wherein a first dielectric layer is formed on a substrate by spin coating, a liquid phase deposited
5 (LPD) silica layer is formed the first dielectric layer, and a second dielectric layer is formed on the LPD silica layer by spin coating. The LPD silica layer can be further subjected to a nitrogen plasma treatment to enhance its thermal stability and anti-water penetration ability.